

Need for Reliable Water Quality Monitoring / Evaluation of Impact of Water Exports on Water Quality in the Delta & Its Tributaries

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SWRCB Web Page States:

“OUR MISSION is to establish and maintain a stable system of water rights in California to best develop, conserve and utilize in the public interest the water resources of the State while protecting vested rights, water quality and the environment.”

- SWRCB Water Rights Decisions Involving Water Exports & Flow Manipulations Have Significant Impacts on Delta and its Tributary Water Quality
- Current Delta/Tributary Water Quality Monitoring Programs Inadequate to Define Impacts of Water Rights Decisions on Water Quality
- SWRCB Needs to Require Water Quality Monitoring Program to Define Impacts of Water Exports on Water Quality

Delta Channels Listed as Clean Water Act 303(d) Impaired for Variety of Pollutants

- Currently Used **Pesticides** That Cause Aquatic Life Toxicity
- **Legacy Pesticides & Other Organochlorine Chemicals** That Cause Excessive Bioaccumulation of Hazardous Chemicals That Cause Delta Fish to Be Hazardous to Eat
- Sediment Toxicity Due to **Pesticides & Other Chemicals**
- Potential Toxicity of **Heavy Metals** in Water Column & Sediments
- Toxicity from **Unknown Causes**
- **Mercury** That Bioaccumulates to Excessive Levels in Delta Fish
- **Low DO** in Deep Water Ship Channel & South Delta Channels Due to “Hydromodification” – Altered Flow
- **Pathogen Indicator Organisms** That Indicate Parts of Delta Are Unsafe for Contact Recreation

Delta Channels Listed as Clean Water Act 303(d) Impaired for Variety of Pollutants

- Depressed Primary & Secondary **Production** That Alters Delta Food Web & Fish Production
- Loss of Chinook Salmon Home Stream Water Signal for SJR Watershed Spawning
- Excessive **Total Dissolved Solids** (TDS/EC) That Impact Irrigated Agriculture & Domestic Water Supplies
- Excessive **TOC/DOC** That Impact Domestic Water Supplies
- Excessive **Fertilization** of Delta Waters That Impacts Contact Recreation, Domestic Water Supply Water Quality & Use of Delta Waters for Drip Irrigation
- Other, Unidentified Water Quality Problems Due to Municipal/Industrial/Agricultural Discharges to Delta & Its Tributaries **Endocrine Disruptors, PPCPs, New Pesticides**, etc.

Impacts of SWRCB Water Rights Decisions on Delta and Tributary Water Quality

- SWRCB Water Rights Decision on Water Exports & In-Delta Flow Manipulations Alter Water Flow Patterns in Delta
- Magnitude & Location of Each of These Impairments Controlled by SWRCB Water Rights Decisions That Impact Exports
- Thus Far, Water Quality Impacts Related to SWRCB D-1641 Water Rights Decisions Restricted to TDS/EC
- Inadequate Attention to Impacts of South Water Exports by CVP & SWP on Other Water Quality Problems in Delta That Are Impacted by Water Rights Decisions
- If Technically Valid Water Rights Decisions Are to Be Made by SWRCB, Information Is Needed on How Exports & Flow Manipulations Impact Delta/Tributary Water Quality

SJR DWSC Low-DO Problem

- SWRCB D-1641 Water Rights Decision Postponed Adjustment of Water Rights & Flow Management until SJR DWSC Low-DO TMDL Was Established
- Low-DO TMDL Has Been Adopted by CVRWQCB – SWRCB Should Proceed to Adjust Water Rights/Diversion of SJR Watershed & South Delta Water Exports to Minimize Adverse Impacts on DO Concentrations in DWSC
- Important for SWRCB to Correct Problems Created by State & Federal Export Projects That Export South Delta Water through HOR to South Delta - as Part of Current Deliberations on D-1641 Water Rights Review
- Need to Provide at Least 1,500 cfs of SJR Flow through DWSC to Minimize Low DO in DWSC

Flow Manipulations on CWA 303(d)-Listed Waterbodies

- Must Consider Impact of Flow Alterations on **All** Pollutants in 303(d)-Listed Waterbodies
- 2002 CWA Section 303(d) List of Water Quality Limited Segments Included:

Lower Stanislaus River

- Listed for Diazinon, Group A Pesticides, Mercury, Unknown Toxicity
- Proposed Reduction in Flow from New Melones Reservoir during Summer Could Cause Adverse Impacts to Water Quality in Lower Stanislaus River for Several 303(d)-Listed Pollutants
 - Violations of CWA & Porter-Cologne Anti-Degradation Requirements

Flow Manipulations on CWA 303(d)-Listed Waterbodies

San Joaquin River (Merced River to South Delta Boundary)

- Listed for Boron, Chlorpyrifos, DDT, Diazinon, Electrical Conductivity, Group A Pesticides, Unknown Toxicity
- Reduction in Flow of San Joaquin River Could Aggravate Impairment by 303(d)-Listed Pollutants
- Need Studies to Evaluate Impact of Alteration in SJR Flow on Existing Pollutants
 - Requires Development & Implementation of Comprehensive Water Quality Monitoring Program
- Water Quality Modeling That Only Addresses One Conservative Pollutant Such as Salt Provides Inadequate Technical Basis for Establishing Water Rights Decisions That Are Supposed to Be Protective of Water Quality

Characteristics of Needed Water Quality Monitoring Program

- Specifically Focus on Assessing Current Status of Impairment for Each of Delta Channel and Tributary 303(d) Listings
 - Determine Whether “Impairment” Is Real Impairment of Beneficial Uses
- Specifically Address Magnitude, Area & Duration of the Impairment
- Define Constituents Responsible for Impairment, If Not Already Defined (Such as for Toxicity), & Sources of Those Pollutants
- Include both Water Column & Sediments
- Include Focus on Excessive Fertilization of Delta Waters as Evidenced by Excessive Growths of Water Hyacinth, *Egeria densa* & Emerging Problem of Blue-green Algae
- Where Real Potentially Significant Water Quality Impairments Exist in the Delta/Tributary, Determine How Water Exports & Flow Manipulations Impact Magnitude, Location & Duration of the Impairment

RMP for San Francisco Bay as a Model

- San Francisco Bay Regional Water Quality Control Board, with Cooperation & Assistance of SF Bay Dischargers, Organized Regional Monitoring Program (RMP)
- RMP Implemented through San Francisco Estuary Institute (SFEI) Is Good Model of the Type of Water Quality Monitoring Program Needed for Delta & Its Tributaries
- RMP Focuses on Water Quality Problem Definition & Developing Information That Can Be Used to Manage Those Problems
 - Focus Is on Constituents That Cause SF Bay to Be on 303(d) List

Inadequate Water Quality Monitoring Programs for Evaluating Impact of D-1641 Order

- D-1641 Water Right Order Requires That Comprehensive Water Quality Monitoring Program Be Developed to Evaluate Impact of South Delta Water Export & Flow Manipulations
 - Being “Implemented” through IEP Environmental Monitoring Program (EMP)
- D-1641 IEP EMP Water Quality Monitoring Program Grossly Deficient Compared to That Needed to Properly Define Water Quality Impacts of Water Rights Decisions That Allow SWP & CVP Water Exports
- SWRCB Needs to Appoint Independent Panel of Experts to Design, Oversee & Report on Impact of Delta Water Exports on Delta Water Quality
 - Cannot Be Reliably Conducted by Water Exporters, DWR, USBR, MWD, etc.
 - Exporters Do Not Want to Find Problems with Exports on Delta Water Quality

HR 2828 Water Supply, Reliability, and Environmental Improvement Act

HR 2828, states,

“D) PROGRAM TO MEET STANDARDS-

(i) IN GENERAL- Prior to increasing export limits from the Delta for the purposes of conveying water to south-of-Delta Central Valley Project contractors or increasing deliveries through an intertie, the Secretary shall, not later than 1 year after the date of enactment of this Act, in consultation with the Governor, develop and initiate implementation of a program to meet all existing water quality standards and objectives for which the Central Valley Project has responsibility.”

- Will Need Comprehensive Water Quality Monitoring Program to Properly Implement HR 2828

Funding of D-1641 Water Quality Monitoring Program

- Delta/Tributary Water Quality Monitoring Program Should Be Funded by:
 - Those Responsible for Urban & Agricultural Discharges/Runoff to Delta & Its Tributaries, and
 - Those Who Export Water from Delta & Its Tributaries
- Funding Requirements Should Be Part of
 - SWRCB D-1641 Water Rights Decisions, and
 - CVRWQCB's NPDES Discharge Permits & Ag Waiver Requirements

Overall Recommendation

- As part of Implementing a Water Rights Decision, the SWRCB Should Require that a Comprehensive Water Quality Monitoring/Evaluation Program be Developed and Implemented
- The Results of the Monitoring/Evaluation Program Should be Used to Adjust Water Rights Where Significant Adverse Impacts on Water Quality Are Found

Further Information
Consult Website of
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Publications on:

- Landfills-Groundwater Quality
- Surface Water Quality
- Hazardous Chemical Sites
- Mine Waste Impacts
- Contaminated Sediment
- Domestic Water Supply
- Excessive Fertilization
- Reclaimed Wastewater
- Watershed Studies San Joaquin River Watershed & Delta
- Stormwater Newsletter

CALFED/CBDA Water Quality Monitoring Program Inadequate to Address Delta Water Quality Issues

- CALFED (CBDA) Continually Fails to Develop Comprehensive Water Quality Monitoring/Evaluation Program
- Current Water Quality Monitoring Program
 - Second Class Concern of CBDA Drinking Water Program Water Quality Program
- Water Quality Issues in Delta Much Broader Than TOC/TOC, Bromide & Other Drinking Water Constituents of Concern
- Broad Range Issues of Aquatic Life & Human Health Not Adequately Addressed
 - Lack of Home & Adequate Supporting Staff in CBDA
- Water Exporters Have Excessive Influence on CBDA Activities in Addressing Water Quality Issues
- D-1641 Water Quality Monitoring Program Must Be Conducted Outside of CBDA & Exporting Agencies

Addressing Additional Delta Flow Exports

Before Any Additional Export of South Delta Water Is Allowed, Water Exporter Should Be Required to Fund Studies That:

- Adequately Define Current Impacts of Existing Delta Water Exports on Aquatic Life-Related Delta Water Quality
- Develop & Implement Mitigation Program for Current Water Quality Impacts of Existing Delta Water Exports on Delta Aquatic Life
- Estimate Potential Impacts of Proposed Future Additional Delta Water Exports on Aquatic Life-Related Beneficial Uses of Delta
- Develop & Begin to Implement Mitigation Plan for the Potential Water Quality Impacts of Additional South Delta Water Exports

Additional Information

- **CMARP**, “Comprehensive Monitoring, Assessment and Research Program (CMARP),” CALFED Bay-Delta Program (1999).
<http://calwater.ca.gov/programs/science/cmarp/contents.html>
- **Lee, G. F., and Jones-Lee, A.**, “Need for Reliable Water Quality Monitoring/ Evaluation of the Impact of Delta Water Exports on Water Quality in the Delta and its Tributaries,” Presentation to the CA State Water Resource Control Board D1641 water rights hearing Sacramento, CA March (2005).
- **Lee, G. F. and Jones-Lee, A.**, “Overview of Sacramento-San Joaquin River Delta Water Quality Issues,” Report of G. Fred Lee & Associates, El Macero, CA, June (2004a).
<http://www.members.aol.com/apple27298/Delta-WQ-IssuesRpt.pdf>
- **Lee, G. F., and Jones-Lee, A.**, “Impact of SJR & South Delta Flow Diversions on Water Quality,” PowerPoint Slides, Presentation to CA Water Resources Control Board, D1641 Water Rights Review, January 24 (2005).
<http://www.members.aol.com/annejlee/D1641SlidesSWRCBJan2005.pdf>